BC Geological Survey Assessment Report 31378

REPORT ON PROPERTY EXAMINATION AND ROCK SAMPLING, 18 OCTOBER 2009

# **BESSHI PROPERTY**

### AIKEN LAKE – MESILINKA RIVER AREA BRITISH COLUMBIA

Latitude 56 degrees 28 minutes North Longitude 125 degrees 45 minutes West NTS 94C/5 BC Map 94C042

by R. H. McMillan Ph.D., P.Geo. 30 December 2009

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## **1** Summary and Recommendations

The Besshi property consists of 7 mineral claims covering 1144 ha. It is located 5 kilometres northeast of Aiken Lake adjacent to the Kemess Mine access road and 250 kilometres north of Fort St. James, B.C. The claims are owned by Dr. R.H. McMillan (48%), Mr. RR. Keefe (32%) and Mr. A.D. Halleran (20%). The property is currently under option to Atocha Resources Inc., who can earn a 100% interest in the property.

The property covers a belt of volcanic and sedimentary rocks and was prospected by the Consolidated Mining and Smelting Company (CM&S or COMINCO) in the 1930's. More recently in the 1970's, Susie Gold Mines Ltd. completed soil geochemical sampling, ground geophysical and prospecting for porphyry copperstyle mineralization. In the 1980's, Golden Rule Resources undertook additional soil geochemical sampling, ground geophysical and prospecting directed towards precious metal exploration.

The Besshi Property was originally staked as modified grid and two-post claims by R.H. McMillan and Keefe in 1992, with the McMillan-Keefe claims enclosing the Pol 1-3 claims staked earlier by Mr. William Halleran and partners. The properties were subsequently optioned by Dentonia Resources Ltd. In February 1993, an airborne electromagnetic, magnetic and VLF-EM survey commissioned by Dentonia was flown over the property. McMillan and Keefe and Halleran have undertaken soil, stream sediment and lithogeochemical sampling directed towards precious metal and Besshi-type VMS mineralization.

On Jupiter Creek more than 300 metres of drifting and 200 metres of crosscutting was completed on several gold and silver-base metal showings. The main structure, the Number 2 "vein", is a "shear-zone" structure composed of carbonate-altered pyritic graphytic rock with some green mica (mariposite) alteration. The showing has many aspects similar to "greenstone-type" or "orogenic-type" gold deposits. Based on assay plans (BCEMPR property files) Carter (1993) estimated the main drift exposed a mineralized zone 1.3 metres wide assaying and average of 6.34 g/t Au and 42.5 g/t Ag for a length of 24.4 metres. Cross structures host classical vein-type silver-rich galena and sphalerite mineralization in quartz-carbonate fissure veins.

In the Polaris Creek Area, a strongly altered (silicification and carbonatization) contact area between mafic volcanic and clastic sedimentary rocks has been traced by airborne and ground geophysical surveys for 3 kilometres. Showings of massive sulphide (pyrrhotite-pyrite) nine (9) metres in thickness are exposed in Polaris Creek Canyon. The massive sulphides are characteristic of a paleo-geothermal system and black smoker hydrothermal activity and could host a Besshi-type volcanogenic massive sulphide deposit. Although the massive sulphides exposed in Polaris Creek are barren of base and precious metals, such deposits can change facies along strike and in the stratigraphic footwall into productive base and precious metal environment. Soil geochemical surveys have outlined targets in the recessively-weathered gulley along strike east and west of the exposed massive sulphides. Copper-in-soil values range up to 275 ppm, zinc to 800 ppm, silver to 3.8 ppm, gold to 165 ppb and molybdenum to 120 ppm.

Also in the Polaris Creek area, approximately 550 metres above the massive sulphide horizon, an adit with several branches was driven a total of 45 metres to intersect quartz vein mineralization cutting porphyritic diorite found in talus. The adit reportedly stopped short of the target, however the talus material returned assays of between 6.9 and 415 g/t (0.2 and 12.1 oz/ton) gold. Geophysical conductors 10A and 10B, interpreted to be caused by a 5 to 10 metres concordant tabular body, are located along strike 100 metres southeast of the adit, as are anomalous copper-in-soil samples to 245 ppm Cu.

Perhaps of more significance, and approximately 850 metres above the massive sulphide zone, CM&S found the "Discovery Zone" (BCEMPR Property Files), an area of quartz-carbonate veining in argillite measuring 35 by 6 metres, carrying pyrite, arsenopyrite, pyrrhotite, galena, sphalerite, chalcopyrite and minute particles of free gold. Samples from the veins yielded assays of up to 1015 g/t Au (60 oz./ton), with 36 samples of vein material averaging 2.2 oz/ton Au, with the entire zone estimated to carry 0.11 oz/ ton Au. Along strike from the "Discovery Zone" to the southeast, highly anomalous soil samples (to 616 ppm Cu, 2.0 ppm Ag and 165 ppb Au) with an associated zone of conductivity.

One hundred metres above the "Discovery Zone", CM&S trenched a base metal occurrence called to "Nanny Zone", where a 20 to 100 centimetre thick zone containing chalcopyrite, pyrite and pyrrhotite yielded assays of 3.56% Cu, 2.1 g/t Au and 20.0 g/t Ag across 0.6 metres.

The Besshi property was one of the most important exploration targets for the Consolidated Mining and Smelting Company (CM&S or COMINCO) in the late 1930's. COMINCO completed extensive

prospecting programs and more than 500 metres of drifting and crosscutting, but terminated exploration because of World War 2. Neither COMINCO or any of the subsequent operators have undertaken a drill program on the property despite the highly encouraging results. Targets at Besshi include greenstone and sediment-hosted (orogenic) gold deposits as well as precious metal rich VMS-style deposits.

In October of this year, the author, Mr. Jo Shearer and Mr. John Grabavac visited the property in an attempt to sample the Discovery zone with a diamond rock saw. Unfortunately weather conditions were inclement and approximately 20 cm. of snow covered the ground. Conditions on Polaris Creek were dangerous - warming conditions had raised the creek level and this, together with the presence of approximately 8 cm. of ice made it too dangerous to sample the Discovery Zone which occurs at waters-edge above a 2.5 metre waterfall. This assessment report presents new compilation maps prepared to facilitate this and future programs on the property, as well as the assay results from two till samples believed to be derived from local material.

Although a substantial drill program is clearly warranted for the property, drilling should be preceded by additional soil geochemical sampling and prospecting. A limited program of induced polarization and magnetic surveying over drill locations could also be warranted. A major drill program (approximately 2000 metres in 15 holes) is recommended.

### 2 Introduction

The Besshi Property was staked by Messrs. Ralph Keefe and the author (RHM) in 1992 to cover geophysical anomalies related to a Besshi-type VMS environment centred on Polaris Creek and a greenstoneorogenic gold environment on Jupiter and Polaris Creeks. Since that time, various tenures have been abandoned and re-staked, with the current Besshi claims covering the key soil geochemical and electromagnetic-magnetic anomalies associated with the VMS and orogenic gold environment. Mr. William Halleran and partners owned the original Pol 1 to 3 claims which covered the Polaris and Jupiter gold showings. The McMillan-Keefe and the Halleran claims have now been unified in an agreement between McMillan, Keefe and Halleran whose interests are respectively 48%, 32% and 20%. The partners have since entered into an option agreement with Atocha Resources Inc, whereby Atocha can earn a 100% interest in the Besshi Property.

Much of the information presented in this report is derived from the sources referenced in Section 14 of this report. In addition portions of this report, in particular the sections on the location, geology, physical setting and history of the property are derived partially or verbatim from a report by Carter (1993).

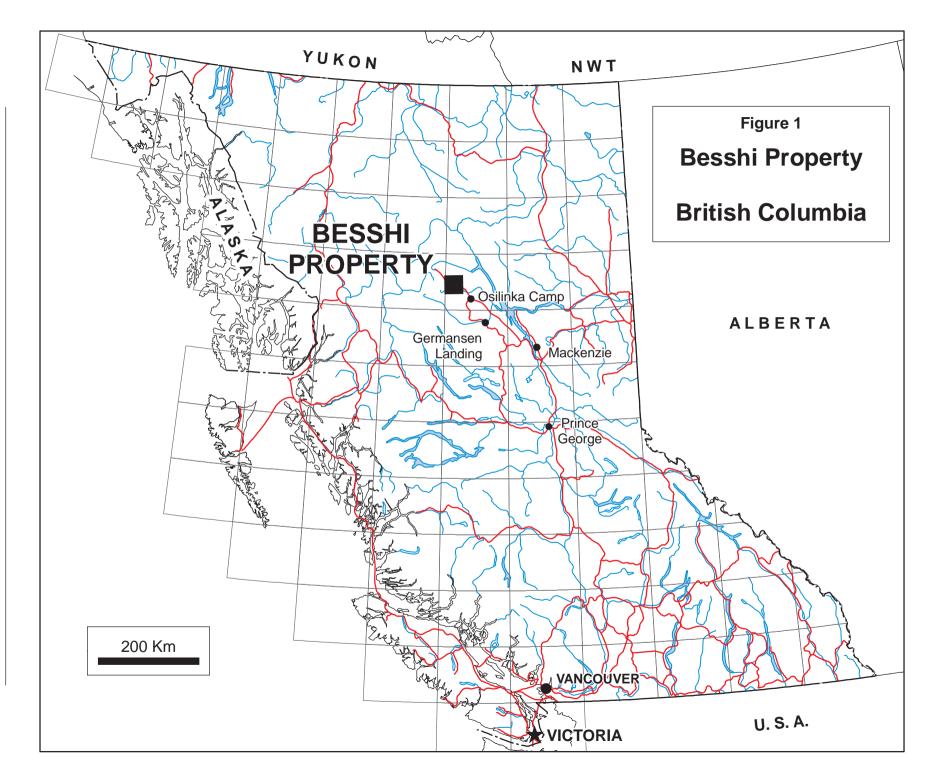
### 3 Location and Access

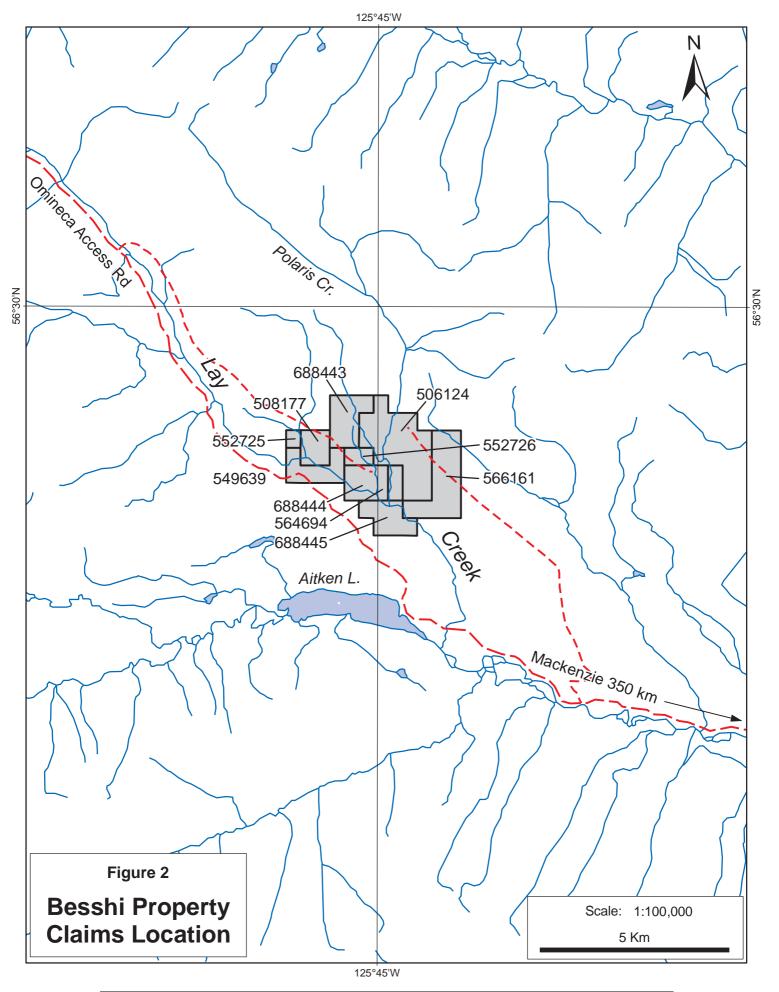
The Besshi property is located 340 kilometres northwest of Prince George (Figure 1). The mineral claims are immediately north of Lay Creek, and between 3 and 6 kilometres north of Aiken Lake (Figure 2) in NTS 94C/5 at latitude 58 degrees 26 minutes North and 125 degrees 45 minutes West.

The property is readily accessible by way of the Omineca Mining Access Road (OMAR) and Kemess Mine road which passes within a few hundred metres of the southern part of the claims (Figure 2). Two principal access routes are available, one by way of active logging roads some 250 km. in length down the west side of Williston Lake to a point 160 km. north of Prince George on highway 97. The second is via the traditional OMAR road south to Germansen Landing and Fort St. James, a distance of approximately 335 km.

Findlay Forest Products recently logged much of the area covered by the claims and excellent road access is available to most areas. A decommissioned logging road on the north side of Lay Creek provides excellent access to the central part of the property and is reached on the north side of Lay Creek at km. 64, approximately 9 km. north of Aiken Lake.

Until recently, accommodation was available at Osilinka Camp, operated by Finlay Forest Products and situated some 50 km. southeast of the property (Figure 1). However the camp is temporarily shut down. A truck stop for ore-haul trucks from the Kemess mine still operates at Osilinka Camp, but does not offer services. The nearest gas facilities area at Germansen Landing (approximately 130 km. south of Aiken Lake) or MacKenzie (274 km. south of Aiken Lake).





R. H. McMillan Ltd. Consulting Geologist

### 4 Mineral Property

The Besshi Property consists of seven mineral claims totalling 1144 hectares, located adjacent to the Kemess Mine road in the Aiken Lake – Mesilinka River area of British Columbia. Messrs. R. H. McMillan, R. Keefe and A.D. Halleran are tenure holders the seven claims which currently comprise the property.

The mineral claims comprising the property are shown on Figure 2 and details are as follows:

Mi	Mineral Tenure – Besshi Property								
Tenure #	Name	Issue Date	Good to Date	Area (ha)	<b>Registered Owner</b>				
506124		2005/feb/07	2013/sep/18	321.72	RHM, RRK, ADH				
508177		2005/mar/02	2013/sep/18	71.49	RHM, RRK, ADH				
549639	Besshi	2007/jan/16	2013/sep/18	107.25	RRK				
552725	Besshi	2007/feb/25	2013/sep/18	17.87	RRK				
552726		2007/feb/25	2013/sep/18	35.75	RRK				
564694	Besshi	2007/aug/16	2013/sep/18	35.75	RRK				
566161	Besshi	2007/sep/18	2013/sep/18	214.53	RRK				
688443		2009/dec/22	2010/dec/22	125.09	RHM				
688444	Besshi	2009/dec/22	2010/dec/22	107.26	RHM				
688445	Besshi	2009/dec/22	2010/dec/22	107.29	RHM				
		Total	1144.00						

## 5 Physical Setting

The Besshi property is situated on a relatively gentle south-facing slope in the lower reaches of the Lay Range, immediately north of Lay Creek, an east-flowing tributary of Mesilinka River (Figures 1, 2, 3). The broad Lay Creek valley is broken by deeply incised (+100 metres deep) canyons along both Lay and Polaris Creeks (Figure 3). Elevations range from slightly more than 1000 metres in the south-eastern property area to about 1450 metres along the northern boundary.

Prior to logging, an open forest cover of spruce, pine, fir and poplar extended over most of the property. Bedrock is best exposed in the canyons along Lay Creek and the two principal tributaries - Polaris and Berry Creeks. Overburden, consisting of gravel and till, ranges in thickness form a few centimetres to more than 30 metres and obscures more than 95% of the property area. Excellent bedrock exposures are present in the canyon walls of Lay and Polaris Creeks.

# 6 History

The earliest recorded mining activity in the general area of Aiken Lake took place in 1899 and was directed towards placer gold on Jim May Creek, a tributary of Osilinka River. Prospecting for lode deposits, initiated throughout north-central British Columbia by the Consolidated Mining and Smelting Company (COMINCO) in 1927, was successful in the discovery of a number of mineral showings including the Jupiter and Polaris gold-silver prospects. The Polaris Aand Jupiter showings are included within claims of the present Besshi property.

Work by COMINCO on these two prospects continued through the 1930's and included surface stripping, hand trenching and more than 500 metres of underground development on the Jupiter prospect and hand trenching and 45 metres of underground crosscutting on the Polaris prospect 4 km. to the east.

Both prospects lay dormant until 1975, when a large block of claims located by Susie Gold Mines Ltd. included most of the present Besshi property (BCEMPR Assessment Report 6037 and 6607). Work by this company in 1976 and 1977 was directed towards assessing the potential for porphyry copper-molybdenum mineralization and included geological mapping, magnetometer and VLF-EM surveys and soil sampling over a large area north of Lay Creek between Berry and Polaris Creeks.

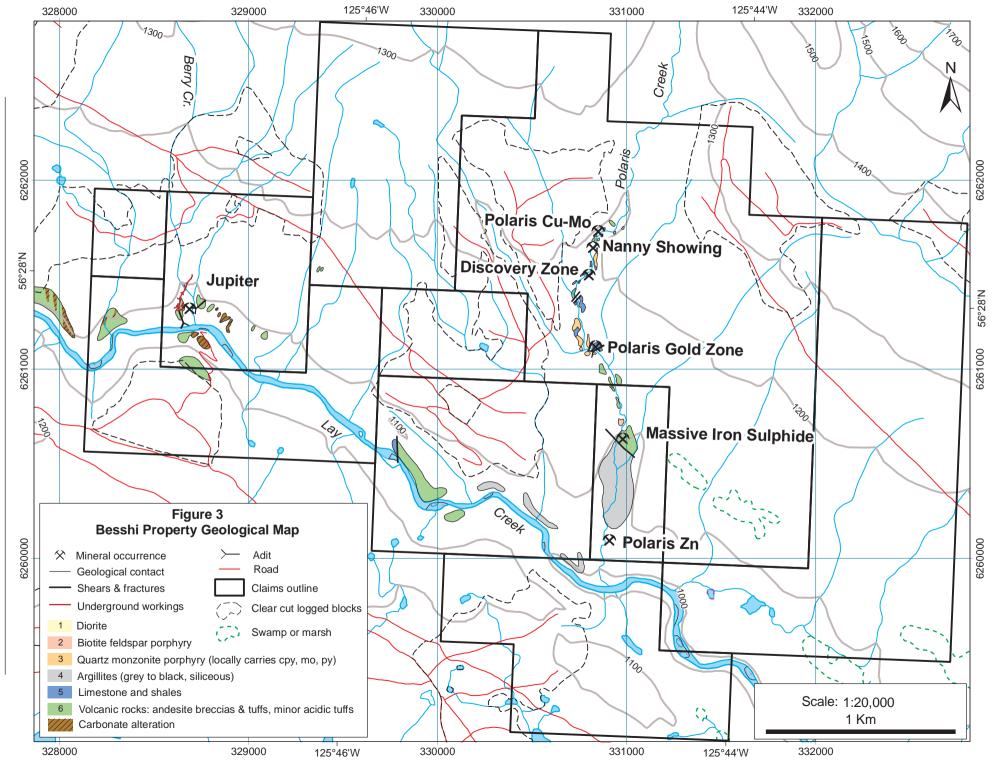
Claims were re-located over the same general area by Golden Rule Resources in 1980. The precious metals potential of the Jupiter and Polaris prospects was the main focus of attention and work through 1983 included soil geochemistry and geophysical surveys centred on the two principal mineral showings, construction of a 1 km. tote road linking the Jupiter workings with the Omineca road and some re-sampling of the main Jupiter adit (BCEMPR Assessment Report 11251).

Skylark Resources Ltd. re-located claims in 1987 and completed soil and stream sediment geochemistry north and south of Lay Creek (BCEMPR Assessment Report 17457).

Prospecting and limited rock sampling was carried out by Mister W. H. Halleran in the area of the Jupiter and Polaris showings following the location of the Pol 1-3 claims in 1990.

In February 1993, Dentonia Resources Ltd. commissioned Geonex Aerodat Inc. to complete a helicopter mounted magnetic-electromagnetic-VLF-EM survey over the property (Wollham, 1993; McMillan, 1993a). In the survey, a total of 125 line kilometres was flown, and a satellite-based global positioning device (GPS) was utilised for accurate location of the anomalies. In August 1993, Dentonia engaged the author (RHM) and Mr. Ralph Keefe to undertake ground geochemical and geophysical surveys which included silt geochemistry (60 samples), lithogeochemistry (18 samples) and 2 km of magnetic and VLF-EM surveying (McMillan, 1993b). The results of the survey are presented in BCEMPR Assessment Report 22,883. In August 2000, McMillan and Keefe completed additional lithogeochemical (2 samples), stream sediment (21 samples) and soil geochemical (38 samples) surveys in the area west of Polaris Creek (BCEMPR Assessment Report 26,308).

. The earliest government geological work in the area was published in 1940 by Douglas Lay of the B. C. Department of Mines (Lay, 1940). The area was mapped at a scale of 1:253,400 by the Geological Survey of Canada who published Memoir 274 (Roots, 1954) in 1954. More recently, the area was mapped by the B. C. Geological Survey at a scale of 1:50,000 (Ferri, 1992).



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## 7 Regional Geology and Metallogeny

The Aiken Lake area, which straddles the boundary between the Intermontane and Omineca Crystalline tectonic belts, features a number of diverse geological terranes.

The area southwest of Mesilinka River and Aiken Lake, including the present Besshi property (Figure 3), is underlain by late Triassic to early Jurassic Takla Group volcanic and lesser sedimentary rocks which lie along the eastern margin of the mainly coeval Hogem Granitic Intrusive Complex.

These intrusive and layered rocks, part of Quesnel terrane, are in apparent fault contact with a late Paleozoic, island arc-related clastic and volcaniclastic sequence northeast of Mesilinka River and Lay Creek. This older sequence, part of Harper Ranch Terrane, underlies the central part of the Lay Range between Lay Creek and Swannell River and is cored by the northwest-trending 14 x 4 km. Alaskan-type Polaris Ultramafic complex of late Triassic age (Nixon et al, 1990).

The eastern margin of Harper Ranch Terrane is along Swannell River (Figure 3) north of which older, late Proterozoic Inginika Group clastic and carbonate sedimentary rocks of Cassiar terrane are in thrust fault contact with younger rocks.

Harper Ranch Terrane was previously included with Quesnel Terrane sequences of the Intermontane tectonic belt but is now thought to represent the western margin of the Omineca Crystalline belt (Nixon et al, 1990; Ferri et al, 1991).

A regional northwest-trending structural grain is imparted by major dextral and thrust faults separating the various geological terranes, and by faulting, shearing and stratigraphic trends within the various terranes and the northwest trends of the Polaris ultramafic and Hogem granitic intrusive complexes.

Mesothermal (orogenic) shear zone gold deposits and quartz-carbonate veins occupying fracture zones and containing gold-silver values are developed in Takla Group volcanic-sedimentary sequences in the southern Lay Range north of Aiken Lake. The best examples are the Jupiter and Polaris prospects which are contained within the Besshi claims.

Massive and semi-massive layers of pyrite and pyrrhotite-pyrite containing some copper and gold values are known in Takla Group volcanic strata west of Lay Creek several kilometres west of Aiken Lake and in the lower part of Polaris Creek adjacent to the Besshi property.

The Polaris ultramafic complex contains some localised anomalous platinum group metal values in chromite-bearing dunites and pyroxenites (Nixon et al, 1990).

The Aiken Lake area is known to contain numerous different types of mineral deposits and occurrences. The most prevalent are copper (gold) showings developed in fracture zones and marginal to satellitic intrusions in Takla Group volcanic rocks peripheral to the eastern margin of the Hogem intrusive complex.

Quartz veins containing pyrite, chalcopyrite, magnetite and molybdenite and locally gold values are numerous in Takla volcanic rocks west of Aiken Lake. Several magnetite lodes in volcanic rocks in the same general area are known to contain locally significant concentrations of copper and gold.

Within Takla Group rocks, located respectively approximately 120 km. southeast and 100 km. south of the Besshi Property, Terrane Metals Corporation's Mount Milligan porphyry deposit and Serengeti Resources' Kwanika deposit are both advancing towards production. According to the Terrane website, Mount Milligan has a reserve of 482.4 million tonnes grading 0.20% Cu and 0.388 g/t Au. The Serengeti website states that, based on a 0.25% equivalent cutoff grade, a resource of "182.6 million tonnes of Indicated Mineral Resources grading a 0.47% copper equivalent or a 0.71 grams gold/tonne equivalent containing 1.62 million tonnes grade 0.32% copper equivalent or 0.49 grams gold/tonne equivalent and contain an additional 0.2 million ounces of gold and 120 million pounds of copper."

## 8 Property Geology

The principal geological elements are shown on Figure 3. The following description is based on reports by Potter (1976), Roots (1954), and Lay (1940) an on mapping by the author (RHM) in August of 1993 and 1999.

The oldest rocks, exposed in Polaris Creek, are a mafic-dominated section of basaltic tuffs and minor flows with intercalated impure limestones, cherty argillaceous siltstones and greywackes. The sequence is intruded by a few dykes and two sill-like bodies of quartz monzonite and biotite porphyry. Bedding generally strikes north to north-northwest, with moderate dips generally to the east, although local open folds were noted.

A prominent northwest-trending fault zone is well-exposed at the base of the triple waterfall in Polaris Canyon. The fault zone separates the volcanic-volcaniclastic sequence to the northeast from a thick succession of black, pyritic and graphytic argillites. The contact area between the mafic volcanic rocks and the black argillites is marked by intense carbonatization, silicification, pyritization and bleaching. The steeply-dipping, northwest-trending epiclastic sequence has an apparent thickness of more than 1000 metres.

The sedimentary sequence is bounded on the southwest by intermediate to mafic volcanic flows and tuffs which are variably sheared and feature locally intense chloritic and carbonate alteration, the latter being particularly well developed adjacent to the Jupiter No. 2 "shear-zone" structure as well as on the tote road on the south side of the Jupiter adit. Small porphyritic dioritic bodies which parallel the No. 2 "shear-zone" structure are possibly inrusive in origin (Roots, 1954).

The volcanic and sedimentary rocks underlying the Lay Range and extending south to Lay Creek were regarded by Roots (1954) as being of late Paleozoic age. Roots' map shows these rocks to be separated from the late Triassic to early Jurassic Takla strata to the west by a fault. Mapping by Potter (1976) shows no fault or displacement of lithologies along Lay Creek. More recently work by Ferri (personal communication) indicates that both the volcanic assemblages and the intervening sedimentary unit form the basal part of the Upper Triassic Takla Group. The nature of the sedimentary rocks which include calcareous units and black pyritic fine clastic sedimentary strata suggests deposition in a back-arc environment.

### 9 Mineralization

Several distinctive styles of mineralization are present in and adjacent to the Besshi claims. These include precious metal-rich "mesothermal or orogenic shear zone" gold-silver mineralization and silver-base metal fissure veins at the Jupiter showings near Berry Creek. To the east, in Polaris Creek canyon, several types of mineralization outcrop. Two areas of "mesothermal or orogenic vein-type" gold mineralization are present, weakly developed porphyry copper-molybdenum mineralization and stratiform massive and semi-massive pyrrhotite-pyrite. In the upper section of Polaris Creek, the Nannie showing is associated with cherty interflow sediments and shows similarities to VMS-style mineralization.

#### 9a Jupiter Area

At the Jupiter workings, the adit on the west side of Berry Creek (Figure 4) follows the main, No. 2 "vein" structure over a strike length of more than 200 metres. The No. 2 "vein" (Lay, 1940; Roots, 1954) is a steeply west-dipping north-striking zone of siliceous and carbonate alteration of mafic volcanic and graphyticpyritic sedimentary strata. Green mica (mariposite ?) alteration is reported (Roots, 1954) to be present in the adit and can also be seen in similar altered rocks on the tote road on the south side of Lay Creek. Possibly intrusive and esitic or dioitic porphyritic rock is exposed near the adit portal and was reported to be present in the adit workings (Roots, 1954). Widths on the No. 2 "vein" generally averaged 0.6 metres or less, however detailed sampling by CM&S personnel in the 1930's indicated better gold grades over a 30 metre strike length between 50 and 80 metres from the adit portal (Lay, 1940; BCEMPR property files). The plan (BCEMPR property files) shows individual samples within this zone ranging up to more than 100 g/t Au over widths of several centimetres. Calculations by Carter (1993) on 42 samples within one high-grade zone exposed where the drift traverses the No. 2 structure, indicated an average grade of 5.34 g/t Au and 42.46 g/t Ag across an average width of 1.3 metres along a strike length of 24.4 metres. Some 30 metres north of this high-grade section, a 12 metre crosscut driven east has exposed similar mineralised material from which 4 samples yielded a weighted average grade of 15.98 g/t Au and 79.2 g/t Ag over a width of 1.26 metres. North of this crosscut, where the main drift again traverses the No. 2 structure, samples across 0.3 to 1.2 metre widths yielded values in the 0.7 to 2.4 g/t Au range.

The second type of mineralization in the Jupiter area consists of silver-rich fissure-veins such as the Numbers 1 and 3 veins, which are northeast-striking, southeast-dipping quartz carbonate veins containing sphalerite, galena, tetrahedrite and chalcopyrite. Carter (1993) calculated the weighted average for 17 samples for the No. 1 vein over a width of 1.33 metres and a strike length of 20 metres to be 0.34 g/t Au and 834.2 g/t Ag. For the No. 3 vein, Carter (1993) calculated an average grade of 2283.8 g/t Ag and 0.31 g/t Au over and average width of 0.57 metres and a strike length of 10 metres.

A 45 metre adit driven northeast on a continuation of the No. 3 vein structure on the east side of Berry Creek (Figure 4) yielded only low values (Lay, 1940).

#### 9b Polaris Creek Area

As stated above, there are several showings and different styles of mineralization exposed in Polaris Creek. Beginning at the uppermost end at the northern end of Polaris Creek canyon, approximately 200 metres north of the upper waterfall, porphyry-type copper-molybdenum mineralization is present in the northernmost granitic intrusive body. A grab sample collected by Potter (1976) returned 0.23% Cu, 0.004 % Mo, 5.8 g/t Ag and 0.1 g/t Au.

South of this, 150 metres above the waterfall, CM&S trenched a 20 cm. to 1 metre thick showing called the Nanny Zone which yielded and assay of 2.1 g/t Au, 20 g/t Ag and 3.56% Cu in a 60 cm. sample which contained pyrite, chalcopyrite and pyrrhotite. In 1993 (McMillan, 1993) several concordant horizons of semi-massive pyrrhotite-pyrite associated with magnetite, minor chalcopyrite and cherty sedimentary layers a

few centimetres to a metre in thickness were identified, however the Nanny showing was not identified - probably because the old trenches have sloughed-in.

Downstream, immediately above the upper waterfall, a zone of quartz-carbonate veining called the "Discovery" zone was trenched by CM&S in 1932. This work exposed a network of 2 to 20 cm. wide quartz-carbonate veins with fine pyrite, pyrrhotite, chalcopyrite, galena, sphalerite and minor free gold cutting dark, calcareous argillite. Samples taken by CM&S assayed as much as 1014.8 g/t Au and 148 g/t Ag over narrow widths, however most samples assayed considerably less than 1 oz/ton Au - the entire zone which was estimated to cover an area approximately 6 by 35 metres was estimated to average approximately 3 g/t Au.

Approximately 475 metres below the "Discovery" area CM&S drove the 50 metre long Polaris adit into the east bank of Polaris Creek canyon in an attempt to intersect an inaccessible vein 15 to 40 cm. in thickness which shed talus fragments assaying between 6.85 g/t and 415 g/t Au.

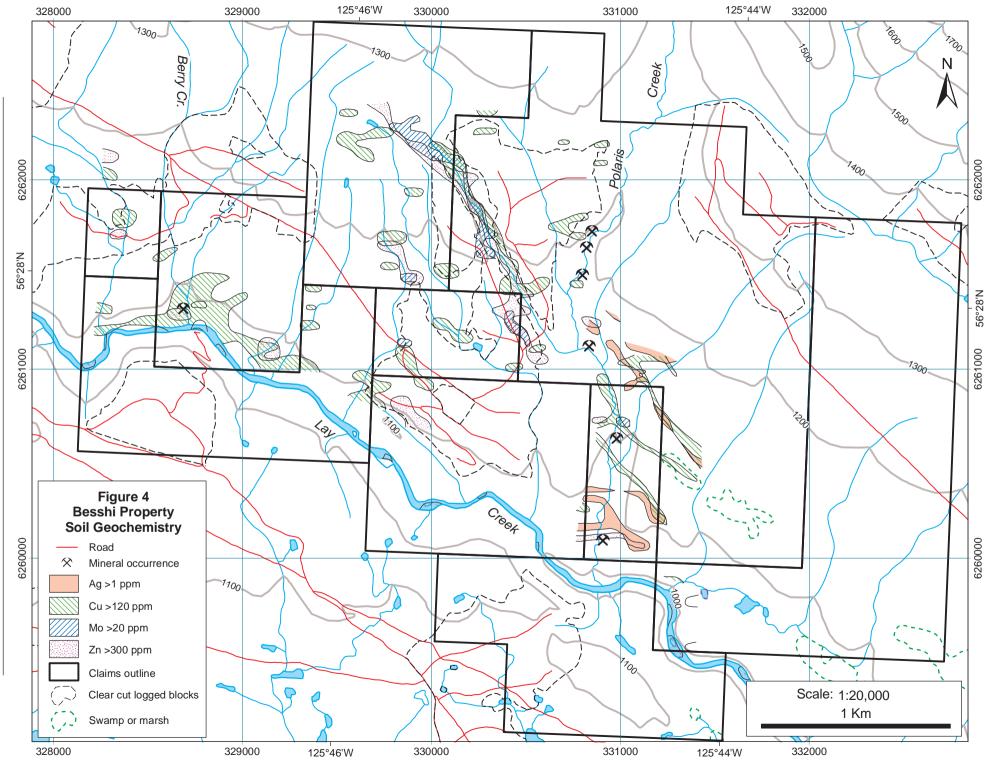
Immediately above the 3-level waterfall, 550 metres below the Polaris adit, a 6 to 10 metre thick layer of massive pyrite-pyrrhotite is exposed on the west bank of the canyon. The massive sulphides form a north-striking, 45 degree east-dipping slab which outcrops along a 40 metre strike-length and for 30 metres down-dip. Minor magnetite and trace chalcopyrite are associated with the iron sulphides. In 1991, a grab sample taken by W. Halleran returned anomalous copper and molybdenum values of 834 and 12 ppm respectively.

Quartz-carbonate stringers containing pyrite and pyrrhotite and hosted in the sedimentary sequence in the lower reaches of Polaris Creek and along Lay Creek were found by CM&S and McMillan (1993b) to contain only low gold and silver values.

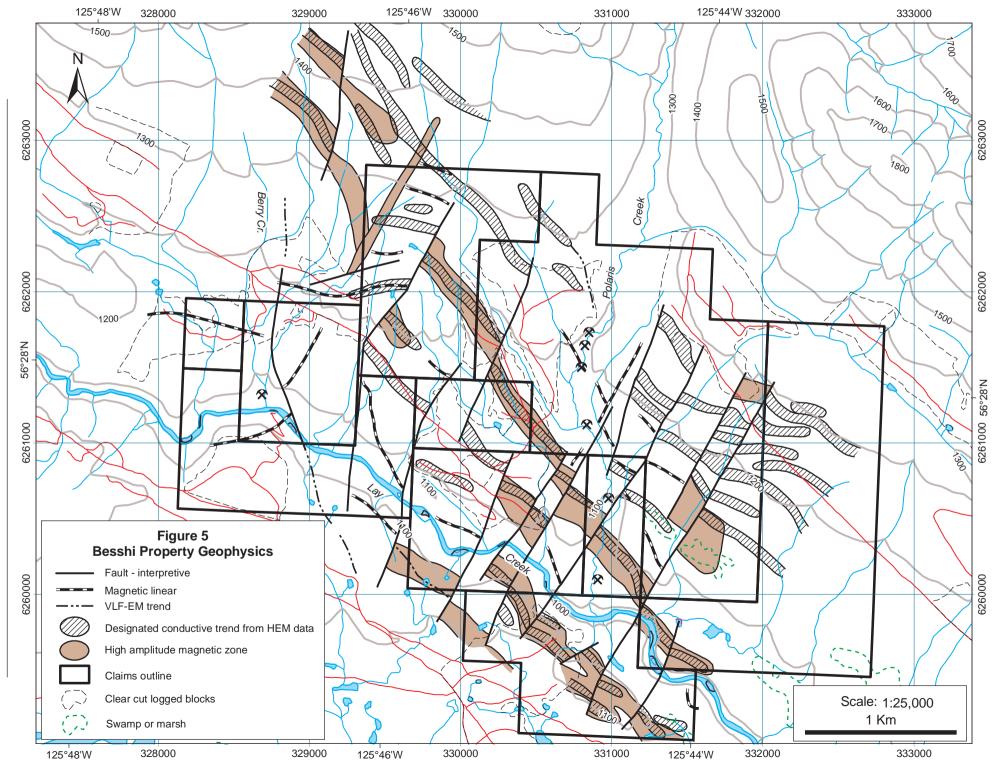
### 10 Geochemistry

Soil sample results from previous large-scale programs (Potter, 1976 - 876 samples; Fox, 1981 - 400 samples and Fox, 1983 - 65 samples) were compiled by McMillan (1993b - Map 2). Featured prominently is a northwest-trending, 1.5 long linear zone with anomalous copper (+ 120 ppm), zinc (+ 300 ppm) and molybdenum (+ 20 ppm) on the west side of Polaris Creek semi-concordant to the trend of the massive pyrrhotite-pyrite body exposed in Polaris Creek Canyon. These results are summarised on Map 2 of this report.

On the east side of Polaris Creek, the work by Fox (1981 and 1983) has defined two subparallel northwest-trending Cu-Ag zones 700 metres in length (Map 2). The southeast anomaly extends southeast from the massive pyrite-pyrrhotite body in Polaris Creek canyon. The stronger and better-defined northwest anomaly is along the strike projection of the Nanny and Discovery showings. Copper values are as high as 600 ppm and silver 2.0 ppm. Anomalous gold-in-soil anomalies are associated with the southeast anomaly with values as high as 165 ppb Au (Fox, 1983).



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## 11 Geophysics

In previous programs (Stelling, 1977; Fox, 1981) ground VLF-EM and magnetometer surveys were completed over the grids, and linear northwest-trending magnetic highs (+ 200 nanoTeslas) with coincident VLF-EM anomalies (Fraser filtered values of more than +18) were identified on the west side of Polaris Creek. The geophysical anomalies coincide with the strong 1.5 kilometre long Cu-Zn-Mo soil geochemical anomaly discussed above.

In February (1993) Dentonia Mines Ltd. commissioned Geonex Aerodat Limited of Mississauga Ontario to undertake a helicopter-borne magnetic-electromagnetic-VLF-EM survey over the property (Woolham, 1993 and McMillan, 1993a). The survey utilised a GPS navigational system to locate the anomalies precisely. The survey detected co-incident electromagnetic-magnetic and VLF-EM anomalies along strike from the massive sulphides exposed in Polaris creek canyon. The electromagnetic results also confirmed that the VLF-EM anomalies detected in the ground surveys are bedrock-related.

## **12** Current Program

The object of the October 2009 work on the property was to sample the Discovery Zone. The author, Mr. Jo Shearer and Mr. John Grabavac visited the property on October 18 in an attempt to sample the Discovery zone with a diamond rock saw. Unfortunately weather conditions were inclement and approximately 20 cm. of snow covered the ground. Conditions on Polaris Creek were dangerous - warming conditions had raised the creek level and this, together with the presence of approximately 8 cm. of ice made it too dangerous to sample the Discovery Zone which occurs at waters-edge above a 2.5 metre waterfall. This assessment report presents new compilation maps plotted on datum NAD83 which were prepared to facilitate this and future programs on the property. In addition, the assay results from two till samples believed to be derived from local material.

	Location			Cu	Pb	Zn	Ba	Mn
Sample	UTM NAD83	Name	Description	ppm	ppm	ppm	ppm	ppm
#1	330608E	Highly	Dark brown, highly	268	137	92	41	425
	6261681N	oxidized	oxidized, medium					
		biotite quartz	crystalline, biotite books up					
		diorite	to 6mm across,					
#2	330608E	Fine grained	Orange weathering, highly	65	<2	143	1616	2994
	6261681N	sheared	oxidized, weathered,					
		chemical?	limonite boxworks					
		sediment						

#### Table 1 – Lithogeochemical Samples

The two till samples were dried and submitted to Inspectorate Laboratories of 11620 Horseshoe Way, Richmond, B.C. (V7A 4V5). And analyzed for gold by fire assay (FA)/atomic absorbtion spectroscopy (AAS), and for silver, base metal and other metals by multi acid dissolution (MuA: HCl, HClO<sub>4</sub>, HNO<sub>3</sub> and HF)/ inductively coupled plasma (ICP) technology with analyses by Mass Spectroscopy (MS). The sample descriptions and anomalous metal values are tabulated above in Table 1.

The two samples were collected from the logging road west of Polaris Creek. Sample #1, a highly altered intrusive rock is moderately anomalous in copper and lead. Sample #2 on the other hand is strongly anomalous in barium and manganese and could be a highly weathered exhalite.

## 13 Discussion, Conclusions and Recommendations

The limited prospecting-geochemical sampling program described in this report was undertaken to follow-up earlier work described by McMillan (2000) to investigate areas of bedrock and float exposed by the recent logging operations and to obtain representative channel samples of the Discovery Gold Showing. Unfortunately weather conditions proved inclement and the sampling program could not be safely undertaken. Despite this, two samples of altered intrusive rock and 'boxwork'' limonite believed to be altered exhalite, confirm the presence of hydrothermal alteration and potential mineralization in the area.

The current work has confirmed the Polaris Creek area as having potential for Orogenic Gold and/or Besshi-type VMS mineralization. and confirmed the conclusions and recommendations by McMillan (1993b and 2000) for a diamond drill program to test geochemical and electromagnetic-magnetic anomalies which extend over an length of 3 km. on the two sides of Polaris Creek.

A major deficiency of the earlier geochemical sampling by Susie Gold Mines (Potter, 1976) is the lack of gold and silver analyses. Only the later work by Golden Rule Resources (Fox, 1981, 1983a and 1983b) included analyses for Au and Ag. Although a substantial drill program is clearly warranted for the property, drilling should be preceded by additional soil geochemical sampling and prospecting. Initially the northeast portion of the property in the area of the Discovery, Nanny and Polaris showings should be covered. This area, east of and straddling east of Polaris Creek should be sampled on lines spaced at 100 metres with samples collected at intervals of 25 metres and a total of approximately 400 samples should be collected. Accompanying the soil sampling program, a detailed mapping and prospecting program should be undertaken to investigate the new logging roads and the showings exposed in Polaris Creek.

Contingent upon the above program, a major soil sampling program covering the whole property should be undertaken. Alternately and/or contemporarily, a major drill program (approximately 2000 metres in 15 holes) is recommended. The drill program should be preceded by a limited program of induced polarization and magnetic surveying over proposed drill locations could also be warranted.

### 14 References

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Wollham, R. W. (1993): Report on a Combined Helicopter-borne Magnetic, Electromagnetic and VLF-EM Survey, Besshi Property, Province of British Columbia (NTS 34 C/5) for Dentonia Resources Ltd.

# 15 Certificate

I, RONALD HUGH McMILLAN, of 6606 Mark Lane, Victoria, British Columbia (V9E 2A1), do hereby certify that:

- 1. I am a Consulting Geologist, registered with the Association of Professional Engineers and Geoscientists of British Columbia since 1992, and with the Association of Professional Engineers of Ontario since 1981.
- 2. I am a graduate of the University of British Columbia with B.Sc. (Hon. Geology, 1962), and the University of Western Ontario with M.Sc. and Ph.D. (1969 and 1972) in Mineral Deposits Geology.
- 3. I have practised my profession throughout Canada, as well as in other areas of the world continuously since 1962.
- 4. The foregoing report on the BESSHI property is based on the field work carried out in the current program, as well as a review of published and unpublished information regarding the geological setting, styles of mineralization and results of previous exploration programs within and adjacent to the subject property.
- 5. I own a 48% interest in the BESSHI Property.

R. H. McMillan Ph.D. P.Geo.

Victoria, B. C. 30 December 2009

#### <u>Appendix 1</u> - <u>Analytical Results</u> - <u>Lithogeochemical Samples</u>

Certificate#: 09J Date In: Oct 30,	3123 Analysi	s #1: Au(FA/ Dut: Nov 05, 2	Horseshoe Wa T:(604) 272- E:ipl@ www.ir AAS) Ag	pectorate IPL y, Richmond, B.( 4V5 7818 F:(604)27 inspectorate.com ispectorate.com Analysis #2: ICI	2-0851 1		© PECTORATE		
* Values outlined	d are over the hig	h detection lii	mit for the corr	esponding meth	ods.				
			3	1 0					
Sample Name	SampleType	Wt	Au	Ag	Ag	Cu	Pb	Zn	As
		Kg	ppb	ppm	ppm	ppm	ppm	ppm	ppm
D1 1	De 1	0.7	17		0.6	0.00	107	00	1.7
Besshi 1	Rock	0.7	17		0.6	268	137	92	15
Besshi 2	Rock	0.4	5		0.7	65	<2	143	19
Blank iPL	Blk iPL		<2						
OXI67	Std iPL		1815						
OXI67 REF Min detection	Std iPL	0.1	1817	0.5	0.1		2		
Max detection		9999	10000	0.5	100	1 10000	10000	1 10000	10000
Max detection			FA/AAS	MuAICP	ICP	ICP	ICP	ICP	ICP
Method		Spec	TAVAAS	MuAici					
Sample Name	Sb	Hg	Мо	Tl	Bi	Cd	Со	Ni	Ba
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Besshi 1	<5	<3	<1	<10	7	< 0.2	8	4	41
Besshi 2		3	<1	<10	<2	<0.2	23	45	1616
Blank iPL									
OXI67									
OXI67 REF									
Min detection	5	3	1	10	2	0.2	1	1	2
Max detection	2000	10000	1000	1000	2000	2000	10000	10000	10000
Method	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP

	Inspectorate IPL 11620 Horseshoe Way, Richmond, B.C., Canada V/A 4V5 T:(604)272-7818 F:(604)272-0851 E:ipl@inspectorate.com www.inspectorate.com								
Sample Name	W	Cr	V	Mn	La	Sr	Zr	Sc	Ti
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
Besshi 1	<5	67	63	425	8	24	117	5	0.08
Besshi 2	<5	32	89	2994	<2	125	117	12	0.00
Blank iPL									
OXI67									
OXI67 REF									
Min detection	5	1	1	1	2	1	1	1	0.01
Max detection	1000	10000	10000	10000	10000	10000	10000	10000	10
Method	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP
Sample Name	Al	Ca	Fe	Mg	K	Na	P		
	%	%	%	%	%	%	%		
Besshi 1	1.28	0.21	9.75	0.80	0.11	0.05	0.07		
Besshi 2	0.56	8.28	10.22	2.16	0.06	0.02	0.01		
Blank iPL									
OXI67									
OXI67 REF									
Min detection	0.01	0.01	0.01	0.01	0.01	0.01	0.01		
Max detection	10	10	10	10	10	10	5		
Method	ICP	ICP	ICP	ICP	ICP	ICP	ICP		

Memorandum

from: date: subject:

to:

Mr. Wilcox fax:(250)952-0381 Ron McMillan 2009/12/30 Statement of Expenditures - Besshi Project

#### <u>Besshi Project</u> <u>Statement of Expenditures</u> <u>2009 Work</u>

Date	Transaction	Amount C\$	Amount Foreign
2009/10/15	ferry	85.00	
2009/10/15	2 dinners	47.70	
2009/10/16	gas	58.26	
2009/10/16	gas	50.08	
2009/10/17	gas	72.00	
2009/10/17	gas	41.39	
2009/10/18	gas	72.23	
2009/10/19	gas	53.90	
2009/10/19	ferry	58.50	
2009/10/19	2 dinners	22.45	
2009/10/20	gas	67.01	
2009/10/20	30876.6 km @ \$ 0.50	1543.83	
2009/10/23	Vehicle maintainance	168.31	
2009/10/20	Fees, J Grabavac	1,421.23	
2009/10/20	Fees, J Shearer (5 days @ \$ 735.00)	3,675.00	
2009/10/20	Hotels and meals	1,305.10	
2010/01/30	drafting	3,753.75	
2009/10/30	R.McM (9 days @ \$840)	7,560.00	
	Total	20055.74	

